



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,472	10/20/2003	Steven S. Nasiri	IVS-102	5958
30869	7590	12/21/2004	EXAMINER	
LUMEN INTELLECTUAL PROPERTY SERVICES, INC. 2345 YALE STREET, 2ND FLOOR PALO ALTO, CA 94306			AHMED, SHAMIM	
			ART UNIT	PAPER NUMBER
			1765	
DATE MAILED: 12/21/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,472

Applicant(s)

NASIRI ET AL.

Examiner

Shamim Ahmed

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-8,13-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Shcheglov et al (US 2004/0055380).

Applicant's admitted prior art disclose a process of making MEMS gyroscopic sensor having two masses that are laterally disposed in the device plane and the two masses are moving in opposite directions perpendicular to the device plane (see pages 3-4 in the specification).

Applicant's admitted prior art fails to explicitly show the etching of the subassembly from a gyroscope wafer including the etching steps of reference wafer and cap wafer.

However, in a method of manufacturing gyroscope, Shcheglov et al disclose a process including the steps of etching wafers and bonding together with the deposition of electrode layers as the transducer, wherein photolithographic is performed prior the etching of reactive ion etching (paragraphs 0073-0076).

Shcheglov et al also disclose that gyroscope comprises four masses on a plane and each occupying a separate plane of a supporting frame and the frame is attached to the base plate at a central support in order to increase sensing capability (paragraphs 0025,0029 and 0084).

Shcheglov et al further disclose bonding a cap wafer including control electronics with the base wafer during the manufacturing the gyroscope (paragraphs 0092-0096).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of claimed invention to combine Shcheglov et al's teaching into the Applicant's admitted prior art for increasing the sensing capability of the sensor as taught by Shcheglov et al.

4. ~~Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over~~

Applicant's admitted prior art in view of Shcheglov et al (US 2004/0055380 as applied to claims 1-8 and 13-41 above, and further in view of Turner et al (6,794,272).

Modified Applicant's admitted prior art discusses above in the paragraph 3 but fail to teach thinning the wafer prior to etching process.

However, in a method of forming integrated circuits, Turner et al teach a thinning process using grinding or CMP process prior to etching in order to efficiently reduce the wafer thickness while minimizing yield loss (col.6, lines 52-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of claimed invention to combine Turner et al's teaching into modified Applicant's admitted prior art for efficiently reducing the wafer thickness while minimizing yield loss as taught by Turner et al.


Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nasiri et al (6,533,947) disclose a process of a MEMS device including actuators and electrodes; Kawai et al (6,430,998) and Jeong et al 6,796,178) disclose conventional process to fabricate MEMS gyroscope.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G Norton can be reached on (571) 272-1465. The fax-phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shamim Ahmed
Examiner
Art Unit 1765

SA
December 15, 2004
